of the Corporation. The principal Council schools will also be open for inspection.

Sectional meetings will be held on four or five days of the meeting at carefully chosen centres. The presidents of the various sections are as follows:—A (Mathematical and Physical Science), Prof. A. E. H. Love, F.R.S.; B (Chemistry), Prof. A. Smithells, F.R.S.; C (Geology), Prof. J. W. Gregory, F.R.S.; D (Zoology), Dr. W. E. Hoyle; E (Geography), Mr. G. G. Chisholm; F (Economic Science and Statistics), Prof. W. J. Ashley; G (Engineering), Prof. S. P. Thompson, F.R.S.; H (Anthropology), Mr. D. G. Hogarth; I (Physiology), Dr. A. D. Waller, F.R.S.; K (Botany), Prof. J. B. Farmer, F.R.S.; L (Educational Science), Sir Philip Magnus, M.P.

Every care is being taken in order to ensure the comfort and convenience of all attending the various meetings, and when the arrangements are completed it is anticipated that the accommodation generally will compare most favourably with that provided elsewhere. The various local secretaries are enthusiastically working with headquarters in the endeavour to make the Leicester meeting one to be long remembered for real usefulness and importance. The ladies of the town have formed a special hospitality committee, and are working to make, as they hope, ample provision for the large number of expected guests.

THE ASWAN RESERVOIR.

THE Egyptian Government has lost no time in arranging for the archæological survey of that portion of the Nile Valley which will be submerged by the Aswan reservoir when the dam has been raised seven metres above its present height.

The archæology of Nubia has not so far been very thoroughly studied, so that a comprehensive scheme of work must include:—(1) The consolidation of the foundations of ancient structures; (2) such repairs as are necessary to ensure their safety; (3) the copying of all inscriptions, and a complete photographic record of these buildings; (4) complete plans of each building, showing all structural details; (5) systematic excavation, together with the preparation of plans and photographs of all ancient sites, cemeteries, &c., which will be damaged by the increased level of the reservoir; (6) a complete topographical survey of the valley, which will also indicate all sites, buildings, &c., of archæological interest.

Under the arrangements which have been made by Sir William Garstin, G.C.M.G., Adviser of the Ministry of Public Works, the first three of these will be carried out by the Department of Antiquities; the last three sections, which constitute a survey, both topographical and archæological, will be carried out by the Egyptian Survey Department.

As the dam in its present condition admits of the water-level being raised 1·5 metres if necessary, the investigation of the area which would be affected by this will be undertaken at once, and preparations have been made to commence work in the early autumn of this year.

The recent cadastral survey of Nubia, 1:2500 reduced to the scale of 1:5000, will be utilised as the basis of the topographical survey in order to record the position of all ancient settlements, cemeteries, and structures as they are taken in hand, while the slopes of the valley will be surveyed and contoured.

The Egyptian Government has secured the services of Dr. G. Reisner, who will commence the systematic excavation of ancient sites at the end of September next at the southern limit of the area now submerged. From this point work will be carried on southwards so as thoroughly to examine the valley floor on either bank up to the future level of the reservoir (113 metres above sea-level), and as much above that as may be necessary on account of the water soaking the ground for some distance above it.

The Egyptian Government has included in the estimates for raising the dam a sum of 60,000*l.* for this work, which should suffice both for a thoroughly scientific study of the reach which is to be submerged, and for the necessary work of consolidating the foundations of temples. Facilities will be given to any archæological institutions which may wish to undertake the study of any site, and will thus facilitate the work. All other parts which have not been systematically explored by such institutions will be examined in due course by Dr. Reisner and his staff, and the results will be published so as to form a complete archæological record of this reach of the river.

PROF. ALFRED NEWTON, F.R.S.

WHILE zoological, and more especially ornithological, science has been deprived of one of its most illustrious students and exponents by the death of Alfred Newton, Cambridge has sustained an even more severe blow, both scientifically and socially. For not only has she lost in the late occupant of the chair of zoology a distinguished professor and working zoologist, and a great benefactor to her zoological museum, but likewise a social figure, whose place can never be exactly filled. For the past forty years or so the informal receptions held in term-time by Newton on Sunday evenings at his well-known rooms in Magdalene formed a unique feature in the scientific life of the university. To these gatherings not only were resident zoologists and the more advanced scientific students from all the colleges in Cambridge constant and welcome visitors, but older *alumni* re-visiting their *alma mater,* as well as zoologists educated at other seats of learning, were received and greeted by their host in that genial manner peculiarly his own. Reunions such as these must, unhappily, die with the man to whom they were due; but those in the smoky atmosphere of the old rooms at Magdalene will linger long in the memories of all the kindly old professor's former pupils and friends.

Born in Geneva on June 11, 1829, Alfred Newton belonged to an old East Anglian family, being the fifth son of William Newton, of Elveden, Suffolk, sometime M.P. for Ipswich, by Elizabeth, daughter of R. S. Milnes, of Fryston, Yorkshire, who represented his county town in Parliament. As a boy he was educated privately, but in due course he entered Magdalene College, Cambridge, as an undergraduate, and took his B.A. degree in 1853. In that year, as well as in 1852, he gained the English essay prize at Cambridge; and in 1854 he was elected to a travelling fellowship at his college, which he held until 1863. During the time that he held the travelling fellowship, Newton visited Lapland, Iceland, the West Indies, and North America, while in 1864 he accompanied Sir (then Mr.) Edward Birkbeck to Spitsbergen, then but little known zoologically. To these travels may in all probability be attributed a large proportion of his unrivalled knowledge of the distribution and habits of European birds. At a later period, during a visit to Heligoland, Newton sustained an injury in landing from a boat, which seriously increased a lameness due, we believe, to an accident in childhood. Ornithological observations were, however, continued for many years subsequently during summer yachting cruises, undertaken in company with the late Henry Evans, on the west coast of Scotland and elsewhere.

The most important and far-reaching event in the life of Newton occurred in the year 1866, when he was elected to the then newly-established professorship of zoology and comparative anatomy, a somewhat poorly paid office, which he held until his death on the 7th day of the present month, although he had for some years given up lecturing. The active part which he (in conjunction with his old friend Mr. J. W. Clark) took in the development of the Zoological and Anatomical Museum, and the energy with which he did all in his power to promote the study of zoology in the university, are known to all Cambridge biologists. As to his lectures, these, despite the fact that he was to a great extent a specialist in ornithology, covered a very wide field, in which, however, the systematic and distributional aspects of his subject loomed large.

So long ago as 1859 Newton was elected a Fellow of the Zoological Society of London; and two years later commenced a long, although, of course, interrupted, service on the council of that body, of which he was also for many years a vice-president. In 1870 he received the Fellowship of the Royal Society, and served on the council from 1879 to 1881, and again from 1889 to 1891, being also a vice-president during the latter period. From the same body he received in 1900 one of the Royal gold medals while he was also the recipient in the same year of a gold medal from the Linnean Society, of which he was for many years a fellow. It should be added that in 1877 he was re-elected to a fellowship at his old college, which thus remained his home until the end of his days. Needless to say, the Cambridge Philosophical Society claimed him for a long period as a fellow, and subsequently as president.

Two years after his election to the professorial chair, that is to say, in 1868, Newton brought before the British Association the subject of the protection of birds; and he was subsequently for several years chairman of the close-time committee, during which period the first three Acts devoted to bird-protection were passed by Parliament. As the British Government was the first to move in this matter, Newton may be regarded as the father of bird-protection throughout the world, and, indeed, of all legislation of this nature, which had its origin in his early efforts. His endeavours to check the hideous cruelties connected with the collecting of so-called osprey plumes form another of his many claims to the gratitude of posterity. The establishment and maintenance of stations for observing the migration of birds also claimed a large share of his time and attention, and he was for many years chairman of the British Association Migration of Birds Committee. The important results which have accrued (and are still accruing) from these observations are familiar to all naturalists.

The scientific writings of Newton, which relate chiefly to ornithology, are remarkable for their finished and scholarly style, as well as for their extreme accuracy. To ensure both these attributes the author would, in the first place, defer sending his MS. to press as long as possible, and when it was in type he would go on correcting and refining until both printers and publisher's must in many cases have been driven to the verge of insanity. As he was also a slow writer, the production of such of his works as were issued in parts extended over unconscionably long periods. Although, as already mentioned, characterised by the excellence of their literary style, Newton's writings in not a few instances were marked, more especially in footnotes, by criticisms of perhaps rather more caustic character than the occasion demanded.

Newton's earliest recorded paper appears to be one on the cedar-bird, published in the *Zoologist* for 1852, this being followed in the next year's issue of the same journal by one on the habits of the kiwi. His visit to the West Indies was marked by the appearance in 1859, in the first volume of the *Ibis*, of a paper on the birds of those islands. This reference to the *Ibis* affords a convenient opportunity of mentioning that Newton took a prominent part in founding that invaluable journal, of which he edited the second series (1865–70). He also took an active share in founding the *Record of Zoological Literature* (now the *Zoological Record*)—a publication without which the study of zoology would now be practically impossible. To the first six volumes Newton contributed the annual record of the class Aves, while he acted as editor from 1871 to 1874 (vols. vii.–ix.). It may be added that his exertions and influence were no less important at a later period in bringing about the establishment of the British Ornithologists' Union.

The fact that during the 'sixties his brother Edward held the post of auditor-general of Mauritius (subsequently becoming governor) seems to have directed the attention of Alfred Newton to the birds, both living and extinct, of the Mascarene Islands. In 1861 and 1863 we find him, for instance, describing certain new birds from Madagascar and Mauritius; while in 1868 he and his brother communicated to the Royal Society a most important paper on the remains of the dodo-like bird from Rodriguez commonly known as the solitaire (*Pezophaps solitaria*), this paper being published in the Phil. Trans. for the following year. The same subject was continued at a later period, when Newton and Mr. J. W. Clark communicated a joint paper, published in the "Zoology of the Transit of Venus Expedition of 1874," a second paper, on the extinct birds of Rodriguez, other than the solitaire, being contributed by Dr. A. Günther and Newton to the same volume. The dodo was also a bird in which Newton was greatly interested, although the description of its remains from the Mare aux Songes was undertaken by his brother, Sir Edward Newton.

At an early period in his career Newton contributed to the *Ibis* (vol. iii., 1861) an epitome of John Wolley's investigations into the history of the extermination of the great auk, or gare-fowl; and from that time to his death the story of that bird was a subject to which his attention was constantly devoted. Indeed, we believe that at the very end of his active career he was engaged on a monograph which should comprise all that is known of that remarkable species.

One of Newton's earliest papers was "Suggestions for forming Collections of Birds' Eggs," published in London in 1860, and from that time onward the study of eggs attracted a large share of his attention. About this time he appears to have come into possession of the magnificent collection made by the late John Wolley—on condition, we believe, that he would write a descriptive catalogue embodying the collector's notes. The first part of "Ootheca Wolleyana" appeared in 1864, while the last was issued only a few months before the author's death. For a long period Newton believed that eggs might afford important clues to many vexed questions connected with avian relations; but this hope he was reluctantly compelled, in the main, to abandon. The Wolley collection of eggs, largely augmented by its late owner, is, we believe, to pass to the University of Cambridge, as is also Newton's valuable ornithological library.

To the general public the late professor is perhaps best known as editor of the first two volumes of the revised and enlarged fourth edition of "Yarrell's British Birds," the first part of which appeared in 1871, although the second volume was not completed until 1882. On the value of this work (completed by Mr. Howard Saunders) it is unnecessary to dilate.

Not less important were the contributions of Newton to the ninth edition of the "Encyclopædia Britannica," these comprising not only a large series of articles on different groups and species of birds, but likewise the article "Ornithology"; the article "Birds," it should be added, being the joint work of Newton and the late Prof. W. K. Parker. With the assistance of Prof. H. Gadow, these articles were subsequently combined by their author to form the well-known "Dictionary of Birds" (1893–1896), which forms a perfect mine of information on ornithological subjects. To this work a few articles were contributed by Dr. R. W. Shufeldt, Mr. C. S. Roy, and the present writer (by whom it was deemed a special honour to be thus associated with his former teacher). The article "Ornithology," which forms the introduction to this volume, is a perfect model of a classically written essay, and includes practically everything that there is to be said regarding the history of the subject of which it treats; while the one on "Migration" is no less important and philosophical.

As regards the other ornithological work of Newton, it must suffice to refer to a chapter on the ornithology of Iceland, issued as an appendix to S. Baring-Gould's "Iceland" (1863), to one on the birds of Greenland in the "Arctic Manual" (1875), and to a list of the birds of Jamaica in a handbook to that island, published in 1881.

To assume that Newton confined his attention to ornithology would, however, give but an inadequate idea of the scope of his knowledge. From the first he was an enthusiastic student of zoological distribution, and in 1862 he read before the Cambridge Philosophical Society a paper "On the Zoology of Ancient Europe," published the same year as a pamphlet by Messrs. Macmillan. In this he directed attention, for the first time, we believe, in this country, to the fact that the name "aurochs" belongs by right to the extinct wild ox (*Bos primigenius*), and not to the bison. His studies had also convinced him that the separation of the northern portions of the two hemispheres as distinct primary zoological regions—the Palæarctic and the Nearctic—is not supported by the facts; and at his suggestion Prof. A. Heilprin in 1882 proposed to unite them under the name of the Holarctic. That this is the true view (especially if the southern portions of the eastern and western divisions be severally cut off as the Sonoran and Mediterranean transitional regions) scarcely admits of argument. A small zoological text-book, of which the first edition appeared in 1874, likewise bears witness to the breadth of Newton's knowledge.

Although essentially conservative in all matters connected with natural history, Newton could not be termed a bigoted Tory in these matters; and when he saw occasion to change or modify his views, he had no compunction in doing so. He was an early convert to evolution, and in 1888 published a pamphlet entitled "Early Days of Darwinism"; and as evidence of the elasticity of his mind in regard to lines of investigation with which he was personally out of touch, reference may be made to his earnest support of the morphological and embryological investigations of the late F. M. Balfour, and of the Mendelian researches of the present day. As regards ornithological classification, he maintained to the last the advisability of employing generic terms in a wide sense. Whether he would ever have given his approval to modern views on nomenclature and the subdivision of species are questions which need not here be discussed.

The late professor, to quote from the obituary notice in the *Times* of June 8, "was gifted with an affectionate nature, which was not the less real because it found little verbal expression, and, possessed of old-fashioned courtesy of manner, he had the best characteristics of the race of English country gentlemen to which by birth he belonged. Stanch in his friendships, firm in his opinions, and following what he held to be right with dogged perseverance, he was a man of whom anyone might well be proud to be the friend, and one whom a very wide circle is now most genuinely mourning."

To the present writer, if he may be allowed to say so, the loss is a very real one—more so than he cares to state fully in public. R. L.

NOTES.

We regret to announce that Prof. A. S. Herschel, F.R.S., died on Tuesday, June 18, at his residence, Observatory House, Slough.

The French section of the Alliance Franco-Britannique will pay a visit to London from June 30 to July 5, and will be entertained at dinner by the British section on July 1.

The third Prehistoric Congress of France will be opened at Autun on August 12 by the president, Prof. Adrien Guébhard, and will close on August 18. Particulars may be obtained from M. Marcel Baudoin, 21 rue Linné, Paris.

Four lectures on plague are being delivered by Dr. W. J. R. Simpson as the Croonian lectures of the Royal College of Physicians. The first lecture was delivered on Tuesday, and the second is to be given to-day. The two remaining lectures will be delivered on June 25 and 27.

Science announces that at the recent session of the Pennsylvania Legislature the Senate voted 60,000*l.* to enable the American Philosophical Society to erect a memorial to Franklin, but the house did not agree to the Bill.

Mr. W. T. Hornaday has presented to the New York Zoological Society his collections of heads, horns, and tusks, comprising 131 specimens, representing 108 species. These are to form the nucleus of a collection to be exhibited at the New York Zoological Park.

A report from Santiago de Chile states that a severe shock of earthquake occurred at Valdivia on June 13. A violent earthquake was also felt at Kingston, Jamaica, on the same date, at 1.20 a.m. The earthquake was especially severe at Port Royal. A curious turbulence of the sea was noticed. An earthquake was felt at Gibraltar at 5 a.m. on June 16.

Through the generosity of several members of the Pillsbury family, of Minneapolis, Dr. Thomas G. Lee has secured, says *Science*, for the department of histology and embryology, University of Minnesota, the working library of the late Prof. W. His, of Leipzig. This collection comprises more than 8400 monographs and other papers contributed by over 2500 different authors.

An exhibition of engineering models, optical, electrical, and scientific instruments, technical education appliances, and tools, is to be held at the Royal Horticultural Hall, Vincent Square, Westminster, S.W., on October 22–26. In addition to exhibits by leading makers, there will be a loan collection of experimental and exhibition models and apparatus, and also lectures and demonstrations in various branches of applied science.